Minnesota Department of Natural Resources
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December 2, 2009

Steve M. Mihalchick
Administrative law Judge
Minnesota Office of Administrative Hearings
PO Box 64620
St. Paul, MN 55164-0620

**RE:** Mesaba Energy Project Final Environmental Impact Statement
Docket #E6472/GS-06-668

Dear Judge Mihalchick:

The Minnesota Department of Natural Resources (DNR) has reviewed the Final Environmental Impact Statement (Final EIS) for the Mesaba Energy Project in northeastern Minnesota. We offer the following comments for your consideration on the adequacy of the Final EIS. Because of the commitment to use Zero Liquid Discharge (ZLD) for both the east and west range sites all additional review "assumed" or "was focused on a proposal with" ZLD of process and blow down water. The DNR still has several concerns with this environmental effects from the project including, process water supply, water quality, water levels, fish habitat, wildlife habitat corridors, mineral leases, mining compatibility and other questions addressed in the DNR comments below. The comments are organized into West Range Site and East Range Site comments and identified using the same numeric identification that was assigned to DNR comments that were submitted on the Draft EIS.

In addition to these comments, there is also a lack of clarity about the demonstration status of the project. The stated life of the project is 20 to 30 years, but it is unclear what will occur at the end of this time period when the demonstration is complete.

## West Range Site Comments

**Comment 76-01**
Table S-4 in the Final EIS lists the Hill Annex Mine Pit (HAMP) under Alternative 1 for "Process Water Supply" for the proposed project. Essar Steel Minnesota has state mineral leases that include 160 acres of leases located within the Hill Annex Mine State Park boundary. One of these state mineral lease parcels includes a portion of the HAMP. Essar's plan includes use of water from the HAMP. The use of water by Essar Steel will limit the amount of water available from the HAMP for the proposed project. The Essar Steel Minnesota mine is currently under construction and has all the required air, water, and mine permits. The Final EIS did not fully consider the elimination of HAMP water due to operation of the new Essar Steel Minnesota taconite mine.

The response to the DNR comment regarding the potential for Canisteo Mine Pit (CMP) to be mined again states that it is "unlikely that the CMP would be mined within the economic lifetime of the Mesaba Generating System". One cannot deduce based on the current or near future economic environment and current/future mining technologies that mining may or may not occur. For example, success of the Magnetation process could lead to mining in the CMP in the next 20 years. Mining of the CMP should be considered a possibility and alternative water sources should be better explored.

In the response to the DNR comment it is stated that "Section 4.5.3.1 (Volume 1) discusses water source alternatives other than the CMP and identifies additional mine pits and the Prairie and Mississippi Rivers as viable alternatives". The use of the Mississippi River as an alternate water source is questionable given that Section 2.3.1.3 of the Final EIS states that Alternative 2 (Obtain Water from the Mississippi River) was "not considered feasible due to the distance from the river and the cost to construct and operate the necessary facilities".

DNR has an established alternative for addressing the CMP outflow with a gravity outflow to the Prairie River via the West Hill and Lind pits. This proposal, if implemented, would reduce the water level in the CMP to approximately 1308-1311 ft msl, not 1313 ft msl as indicated in the response to comments. Another alternative proposed for addressing CMP outflow is to pump water to Holman Lake in order to reduce the CMP water level elevation of 1298 ft msl. Gravity flow to Trout Lake would then ensue after the initial pump-down phase of the project.

**Comment 76-03**
What data does the Project Proposer have that suggests, at lower levels, the HAMP is capable of maintaining 3300 gpm for both Essar Steel's stream augmentation (1200 gpm) after their initial pit dewatering phase and the Project Proposer's demand (2000 gpm)? DNR Comment 76-02, based on the Draft EIS, requested data and information on how the Project Proposer determined that the HAMP could produce 3230 gpm to 4030 gpm. This aspect of this comment was not addressed.

The Project Proposer should not establish a potential water use conflict and then default to Minnesota Statues for allocation priorities. The Project Proposer should fully develop alternatives to creating water use conflicts in the future. If groundwater is to be utilized as an alternative, a projected yield should be stated in the FEIS and a basis for that projection should be presented.

It seems imprudent to rely on only one measurement of outflow from the Lind Pit when so much weight is placed on water use from this system. Outflow from the West Hill/Lind system is highly variable and we would, therefore, question the sustainability of 1800 gpm for available use. This, therefore, places additional pressure on water source alternatives, such as the Prairie River.

It is also stated that the ultimate pit levels would be established during the permitting process. The DNR has concerns about waiting until the permitting process begins to confirm that there is an ample water supply.

**Comment 76-04 (and 76-18)**
The FEIS recognizes that the CMP is used for recreation and that the company would work with DNR on access issues. The CMP will remain open to the public. It seems reasonable that certain areas of the pit would need to be cordoned off for safety and security reasons. For example, at the Pokegama, Winnibigoshish, and Blandin Dams there are 300 to 500 foot zones that are formally posted to no fishing through State Statute. It would seem that a similar zone could be established in this case. If the company is proposing no entry into an area, they would need to work with the County to establish a surface use zoning ordinance.

**Comment 76-05, 76-09, 76-11, 76-22 and 76-23**
The change to ZLD has not negated water quality issues. It has significantly reduced water intake and eliminated the return of cooling water blowdown and site runoff. However, there is still the need for Prairie River water. In Section 4.5.3.2 water quality impacts related to phosphorus (P) are provided. The conclusion is that total phosphorus will increase from 0.004 mg/l to 0.014 mg/l under a worst case

scenario. The base scenario is an increase to about 0.006 mg/l. Detailed information about phosphorus modeling necessary to make a reasoned decision on the water quality impacts to the Canisteo Mine Pit and Panasa Lakes are lacking. Conclusions based on only assumptions as in the Panasa Lakes water quality are also not adequate. Water and phosphorus model inputs and the type of phosphorus model used need to be provided. The changes indicated in the modeling to the CMP from Prairie River water are significant based on the conclusions. Without knowledge of input parameters to the model, the concern is that the increases in P could be greater.

Further, the P concentration at the proposed intake location from the Prairie River is not known. Using data from Prairie Lake may be the best available data; however epilimnetic P concentrations from lakes are typically lower than streams due to phosphorus settling and other factors. It is unclear if data used in modeling Prairie Lake are epilimnetic P concentrations

Increased phosphorus concentrations have the greatest impact on primary productivity on the lower end of the trophic scale such as the CMP and other low P concentration lakes. This can result in a greater negative response to physical lake parameters such as water clarity and dissolved oxygen. In a study of several Ontario, Canada lakes, depleted oxygen concentrations occurred in the hypolimnion at the end of the summer at epilimnetic P of only 0.015 mg/l, (L.A. Molot, Predicting End of Summer Oxygen Profiles in Stratified Lakes, 1992). Other factors such as lake morphology and substrate may influence this. The lack of an organic bottom substrate may reduce the likelihood of reduced hypolimnetic oxygen at these P concentrations, however higher concentrations may promote more productivity and reduce dissolved oxygen. Reductions in hypolimnetic oxygen are already present in late summer as indicated in monthly dissolved oxygen/temperature profiles taken in the CMP in 2006 by the DNR.

DOC (dissolved organic carbon) components that make up water color are high in the Prairie River and Prairie Lake. The question is, if water is pumped to the CMP is there enough change to impact sunlight penetration and lake mixing potentially reducing hypolimnetic dissolved oxygen? Modeling for DOC or water color is not typically done. However changes in DOC cannot be discounted when evaluating positive or negative consequences especially when compounded with increased P. At a minimum, a complete list of water quality parameters and monitoring schedule should be included for the CMP and Panasa Lakes. Also, more detailed information about P modeling will be needed for the Canisteo Pit and Panasa Lakes before any water appropriation permit can be issued. The use of Prairie River water should be minimized or eliminated if at all possible. Strict guidelines and controls may need to be considered in the permitting process.

**Comment 76-07**

The new text provides an adequate description of the fisheries present in the vicinity. The text acknowledges that significant water level reductions could interfere with lake trout natural reproduction in the pit but the impact is not quantified. It would have been helpful to present water level withdrawals through the winter months in an average and worst case scenario so the impacts could be better identified.

While it is true that Trout Lake water levels have remained stable the last few years, it is important to remember these years had below normal precipitation. While many other lakes were seeing reduced water levels because of the drought, Trout Lake was maintained near the Ordinary High Water (OHW). This leads to a potential that groundwater flow is significant from Canisteo. Lowering the water to 1290 would likely cut-off that groundwater flow and there could be impacts to Trout Lake water quality and quantity.

**Comment 76-11**

Water quality "improvements" to Panasa Lakes may be validated by obtaining NPDES permit monitoring data from PCA for the Marble-Calumet WWTF rather than relying on "lack of complaints."

**Comment 76-21**
Regarding the big game corridors, the summary of responses states that there are no impacts to overall populations. This cannot be found in the EIS. "Black bears move great distances as individuals annually in search of food and the iron formation is a significant barrier to this movement. Food resources are better quality south of the formation", pers com Dave Garshellis. Deer, moose and wolves all make dispersal movements which is important for genetic diversity. The developed iron formation forms a physical barrier and the West Location Site would be located in one of the few remaining wildlife travel corridors through the formation.

**Comment 76-26**
There is still a potential for negative environmental effects to the Swan River with the severing of flow from HAMP and the groundwater flow from the pit to Trout Lake and ultimately Swan River.

**Comment 76-27**
Regarding bird strikes on stacks and transmission lines, the EIS makes a statement that "Previous studies and data suggest that bird mortality rates that are the result of these collisions will be insignificant on bird populations within or migrating through the West Range Site study area, but future studies are needed to further support this finding" (page 27 appendix D)

The section states that other research findings conclude that migrant neo-tropical passerines have the highest rate of mortality. It is well documented that those populations are in serious decline, which is not addressed in the Final EIS.

**Comment 76-31**
Gaining control of the riparian land in order to acquire appropriation rights is a key issue, however it should be pointed out that power of eminent domain cannot be used for State land.

**East Range Site Comments**

**Comment 76-01, 76-34, 76-33, 76-35**
The DNR is concerned about the level of analysis on the impact of the proposed plant on mining and the impacts that mining will have on the proposed plant. The pits represented in Figure 3.5.4 of the Final EIS are located in a taconite mining area. These pits are located within the area formerly mined by LTV Mining. LTV Mining closed in 2000. Mesabi Mining assumed the former LTV Permit-to-Mine in this area and thus assumed reclamation responsibility for this area. Mesabi Mining is currently performing an environmental review to determine impacts that will occur when mining is resumed. Resumption of mining in this area would result in pumping water from Pits 6, 9N, 9S, and 2WX so that mining of taconite could occur. This would substantially limit the amount of water available for the proposed facility. Retention of water in these pits for the proposed project would result in the elimination of taconite mining from the area near this project. The 2WX pit area has approximately 320 acres of state mineral leases that are held by Mesabi Mining. This area will be mined when Mesabi Mining commences operation. From 1996 through 2000 LTV Mining mined 11,963,000 long tons of state taconite and paid $7,491,000 in royalties to the state from area 2 taconite pits. At current royalty rates the royalty payment to the state for mining this quantity of taconite ore would total more than $10,000,000 or more than $2,000,000 annually. Taconite mining requires large blasts (explosions) to break the taconite into small enough pieces to transport for processing. The proposed east location for the electric facility is located within the blast buffer of Pit 2WX. Ground vibration from large taconite blasts in Pit 2WX would affect

the proposed electric facility. This would eliminate mining of the 2WX pit or it would require that the mining company use expensive small blasts to limit ground vibration. The economic impact of eliminating or limiting taconite mining in this area has not been fully addressed in the Final EIS.

**Comment 76-36**
With all of the new operation plans for industrial water management in the area there may be more fluctuations to the Whitewater Reservoir than have occurred when LTV was in operation. Depending on length and timing of these water level fluctuations, there could be negative impacts on different fish and aquatic species as well as aquatic vegetation. Also, MN Power recently platted 20 new lakeshore sites. Water level fluctuations could impact these property owners.

Thank you for the opportunity to review and comment on the Mesaba Energy Project Final EIS. Contact me at (651) 259-5156 if you have any questions.

Sincerely,

Randall Doneen
Environmental Review Planning Director

C: William Storm, OES Minnesota Department of Commerce
Richard Hargis, National Energy Technology Laboratory

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